Inequalities In Health Status And In Access And Utilization Of Health Care Services In Tamil Nadu:

Evidences From The National Family Health Surveys

Dr. S. Krishnamoorthy
Bharathiar University
Coimbatore

Funded by
Ford Foundation, New Delhi.

Rural Women's Social Education Centre (RUWSEC)
191-A, Nehru Nagar, Vallam - Post
Chengalpattu - 603 002. Tamil Nadu, India.
Phone: 91-4114-220216, Telex: 220682.
E-Mail: kcm_rural@sancharnet.in

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Community Health Cell
Library and Information Centre
367, "Srinivasa Nilaya"
Jakkasandra 1st Main,
1st Block, Koramangala,
BANGALORE - 560 034.
Phone : 553 15 18 / 552 53 72
e-mail : chc@sochara.org

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Introduction and Aim

Equity in all aspects of life of citizens is a desirable goal of all civilized societies. Equity in health is no less important and is a great concern particularly in developing countries. Unfortunately research in this area is too limited to provide even vague idea on the level or the trend in health equity. In the absence of such information, it is not possible to ascertain whether the policies and programmes in health help enhance equity or serve as impediment to it.

In India though many studies in health have provided some information on the socio-economic differentials in health status and service utilization, equity approach to the analysis is very much lacking. Equity approach to the analysis has become more important now in the context of macroeconomic and structural changes introduced in India in the 1990s. In the light of attempts to withdraw subsidies in all areas including health in the process of deregulation, liberalization and privatization, it becomes necessary to assess equity in health to re-examine the policies and programmes.

The distinction between health equity, health inequity and health inequality though is important, our concern here is to identify inequality in health outcome/status and access and utilization of health care services. By inequality in health we mean the differences in health outcomes and access and utilization of health care services between population groups. The aim of this paper is to examine health inequality in Tamil Nadu as evidenced by the two National Family Health Surveys (Gandhigram Institute of Health and Family Welfare Trust (GIRH&FWT) and International Institute for Population Sciences (IIPS), 1994 and International Institute for Population Sciences (IIPS) and ORC Macro, 2001) and limited to available data in these sources on health status and access and utilization of health care services. This paper aims only to identify the groups, which are disadvantaged and assess how much inequalities affect overall health outcomes, and does not aim to explain why inequality exits.

Population and Sources of Data

Tamil Nadu, one of the larger states in India, situated at the southeast extreme of peninsular India, lies between 8^0 5' and 143^0 35' North latitudes and 76^0 15' and 80^0 20' East longitudes. The state with an area of 130,058 sq. km. has a population of 62.11 million (provisional) according to the 2001 Census of India (Office of the Registrar General and Census Commissioner, 2001). The population is male dominant with 1014 males per 1000 females. The sex ratio of the population aged 0-6 also is male dominant with 1065

boys per 1000 girls. The literacy rate for the population aged 7 and above is 73.47; for males it is 82.33 and for females 64.55 according to the provisional figures provided by the 2001 Census of India. The population has almost completed the process of demographic transition from high birth and death rates to low birth ad death rates. The crude birth rate, crude death rate and natural growth rate are 19.1, 7.7 and 11.4 respectively and the infant mortality rate is 49 in the year 2001(Office of the Registrar General, India, 2003). Close to replacement level fertility (Total Fertility Rate (TFR) of 2.19) is estimated for the period 1996-98 by the NFHS-2 and a moderately below replacement level fertility (TFR of 1.97) for the year 1997 by the Sample Registration System (Office of the Registrar General, India, 1999).

This substantial decline in mortality is possible only with narrowing group differentials in health (declining inequality in health) though not complete equality. Decline in fertility also would have contributed to reducing inequality in reproductive health. Still, however, inequality in health outcome and access to healthcare services may exist. In what follows this is examined for Tamil Nadu.

NFHS-1&2 published materials are used to examine the inequality and then NFHS-2 original data are also used to compute certain indices of inequality. A brief introduction to the sources of data and the methods used are discussed below.

The National Family Health Survey 1992 was the first well planned and executed large scale survey to provided state and national-level estimates of fertility, infant and child mortality, practice of family planning, maternal and child health care and utilisation of services provided for mothers and children's, certain specific morbidity conditions in the general population and some specific ailments among young children. The quality of data from the survey has been claimed to be much better than any other survey of its kind and scale carried out prior to it. Indeed the quality of data is good but at the same time not completely free form non-sampling errors. Reader is referred to Appendix B in the report. The response rate in Tamil Nadu survey is 96 percent of occupied sample households. Eligible women response rate is 98 percent. Eligible women refusal is 0.5 percent. Interview was completed in 4287 households and 3958 eligible women (ever married women of age 13-49) during 18 April – 28 July 1992.

The second NFHS (NFHS-2) conducted in 1998-99 aimed to strengthen the database by providing state and national-level estimate to fertility, infant and child mortality, practice of family planning, maternal and child health, utilisation of MCH services, reproductive health problems, nutritional status of women and prevalence of anaemia among ever-married women and children. The response rate in Tamil Nadu in the second survey carried out between 8 March 1999 and 7 June 1999 is 99.8 percent of the occupied

households. The response rate for eligible women is 99.7. Interview was completed in 5281 households and 4676 eligible women.

Though overall quality of data from these surveys is much better, one cannot expect the quality to be uniform in all the characteristics on which data were gathered. In addition the sample size is not large enough to provide consistent estimates for population subgroups. For example, in spite of larger sample size in the NFHS-2, the neonatal mortality that too for the period of 5 years preceding the survey in the rural area is estimated to be 38.144 with a standard error of 6.157 and in the urban area the rate is 28.451 with a standard error of 6.341 (p224). For the rural area the 95 percent confidence limits are 26.076 and 50.212, within which the estimate for the urban area lies. This implies that the estimates for the rural and urban areas are not significantly different. Such large variations in the estimates of other characteristics are also likely due to small sample size. These need to be kept in mind while looking at inequality in health with the help of NFHS data.

Method

The percent change that could be expected if inequality in each background characteristic is eliminated such that the sub-groups attain the standard of the best one is given. These percentages are given below the last category of the background characteristic under consideration in the tables presented. This has to be interpreted as the percent change in the health indicator that can be achieved if the inequality in the background characteristic under consideration has been removed.

In addition it can also be conceived that the inequality in health can be eliminated in all the background characteristics simultaneously. This means identifying the combination of background characteristics that produce best health situation. Such an idea should not be a utopian idea that all women will reach the social and economic condition enjoyed by a single woman who has the best combination of all background characteristics. Hence a judicious combination of the number and level of background characteristics has to be evolved. Also a group of women who enjoy the best health condition in the society should be sufficiently large such that the sampling error is with in acceptable limit. The reference best health group should have the characteristics that could be attainable by others with some strong efforts by the government.

With the forgoing in mind and knowing pretty well the difficulty in defining the case, let us attempt a classification of persons based on their background characteristics as given below. It is proposed to limit the background characteristics to level of education, community and standard of living. In these, community status being ascribed is not

possible to manipulate by policy. Yet providing opportunities to disadvantaged community can bring in change in the health condition of the entire society. Hence community is included in the classification. Further it has been observed that differences in utilization health care programmes and nutritional status persist even after adjusting the effect of other socio-economic factors (Roy et al, 2004). With the intention that any classification should provide sufficient number of persons in the best category of combination of background characteristics and achievability of the highest possible level in health by an effective programme, the following categorization is made in the background characteristics.

Serial Number	Back ground	Category	Number of ever married women in NFHS-2
1	Community	Scheduled caste/tribes	1100
		Others	3576
2	Education	Less than primary	2274
		Primary completed	870
		Mid-school complete and above	1532
3	Standard of living index	Low	1756
		Medium or high	2872

For each of the health indicator in this paper, the mean (or proportion as the case may be) of the group with best health condition is identified by computing the index for each combination of the categories of the three background characteristics. Normally one would expect non-SC/ST women with at least middle school education and living a medium or high standard of life to have the best health condition than the rest. The NFHS-2 survey covered 4676 ever-married women. This combination of background characteristics is present among 1184 women, about one-fourth (25.32 percent) of women in the sample. Occasionally other combinations may produce better level in some health indicators, which may possibly be due to sampling error. Hence in this exercise that follow, non SC/ST with at least mid school completed level of education and with medium or high standard of living index formed the reference category.

The next question is what would be the change in any given health index if all persons in the society were to enjoy the health condition of the reference category. This is computed by

$$\frac{(I_g - I_r) \times 100}{I_g},$$

Which gives the percent change in the given health index if all were to enjoy the health of the reference category. In this I_g is the index for the general population and I_r is the index for the reference category. This index is computed only for the NFHS-2 data and only for those variables for which it can be computed. As the top one-forth is identified with characteristics associated with woman, the index can be computed for those variables associated with woman.

Findings

Health Outcome

Mortality and general morbidity

Over all the crude death rate is low with of course the possibility of further decline in it. Table 1 provides the age specific death rates and crude death rates obtained from NFHS-1 and NFHS-2 and from the Sample Registration System for corresponding years. All over the world women enjoy better survival conditions compared to men. Tamil Nadu in the past had different picture. But now the situation is similar to that of the world; that is the crude death rate is lower for women than men. However, the rate for females is not consistently lower in all age groups. The death rate under age 5 is higher for girls than boys and after age 5 it is lower for girls. The rates provided in the table clearly indicate poor survival condition for girls below 5 years of age.

Table 2 provides mortality indicators of infants and children under 5 years of age by place of residence, mother's educational level, caste, religion and standard of living from NFHS-1 and NFHS-2.All the indicators, neonatal mortality rate, post-neonatal mortality rate, infant mortality rate and child mortality rate bring out clearly that rural children, children of less educated mothers, scheduled caste/tribe children, and children of poorer households are disadvantaged. For example during 1989-99, out of 1000 babies born in rural area 73 died before reaching 5 years of age while only 49 died among urban babies. Similarly 82 among children of illiterate mothers died while only 31 of children of mothers who completed high school died; a relative risk of 2.7. While 79 children out of 1000 died before attaining age 5 among those who live a low standard of life, only 34 among those enjoy high standard of living. Mortality among children in families with low standard of living is 2.3 times as that among those in families with high standard of living.

If all children experience the morality of the urban children, the infant mortality rate would be 40.4 as observed in urban area and not the average rate of 51.0 obtained during 1989-99. Hence the impact is a reduction of about 21 percent in the infant mortality rate, if urban-rural inequality is eliminated. Similarly if all children were to experience

the infant mortality rate of those born to women completed high school, the IMR would be 25.1; 51 percent less than what was observed. This implies that the inequality is high by educational status of women. Inequality is also high between caste groups and standard of living groups. As stated earlier if all children experience the infant mortality rate of the top one-fourth of the socio-economic category, the infant mortality rate would be 27.9; a reduction of about 45 percent. Eliminating inequality alone can bring down the IMR by 45 percent. About the same level of reduction is possible in Neonatal Mortality Rate, Post-neonatal Mortality Rate and Childhood Mortality Rate if inequality is removed.

Urban-rural and sex differentials in the prevalence of certain specific illnesses in 1992 are given in Table 3a. The prevalence of partial blindness, complete blindness, tuberculosis, leprosy and physical impairment of limbs is high in rural areas than in urban areas. In the case of malaria, the incidence is less in rural areas than in urban areas. Except for blindness, which is more prevalent among women, all other diseases are more prevalent among men than among women. If rural population has the prevalence rate of leprosy as that of urban the prevalence of it in the entire population would be 95.2 percent less than the present level. The indices also show that there would be substantial reduction in other health conditions also if urban-rural and male-female inequality is narrowed down to zero.

IN NFHS-2 also it is noticed that morbid conditions are more prevalent in rural areas than in urban areas (Table 3b). But in the case of sex differences in the morbid conditions, viz., asthma, tuberculosis, jaundice and malaria, we find females to enjoy a better health condition than males. Bridging the male-female and urban-rural inequality could result in substantial reduction in the prevalence of asthma and tuberculosis. Urban-rural inequality in jaundice and male-female inequality in malaria do not exist.

Child Morbidity and Nutritional Status

Tables 4a and 4b give the incidence of acute respiratory infection (ARI), fever and diarrhoea among children in 1992 and 1999. Fever seems to be more prevalent in urban than in rural areas. The prevalence of these three illnesses among children is found to be associated with the level of education of mother. Prevalence is lower among children of better-educated mothers. Acute Respiratory Illness (ARI), coughs accompanied by fast breathing, is more prevalent among Christians than among Hindus and Muslims. This only suggests that there are differences between religious groups but this should not be viewed that religion is the cause for this. ARI and diarrhoea prevalence declines with increasing standard of living. In all the analyses that follow where religion is used as independent variable, it should not be interpreted as a cause-effect relationship. ARI prevalence seems to be higher among boys than among girls. There does seem to be any

difference between boys and girls as regards the prevalence of fever and diarrhoea. As regards ARI, inequality if more between educational level of mothers and between standard of living categories than in other categorization in the NFHS-2. There does not seem to be much inequality in the prevalence of fever between socio-economic groups in NFHS-2. In the case of diarrhoea there is greater inequality by standard living categories, than in the other social groupings. If all experience the standard of the top one-fourth of the socio-economic status group, there would be a reduction of 24.3 percent in ARI and about 18 percent reduction in the prevalence of diarrhoea.

The indicator that is available to gauge the nutritional level of children in NFHS-1 and NFHS-2 is weight-for-age. Though there is a decline in the proportion of children under nourished between 1992 and 1999 still variation persists between social groups (Tables 5a and 5b). Proportion under-nourished is more in rural areas, among children of less educated mothers, among children of scheduled caste/tribe mothers, among children of Muslim mothers, and children in families with low standard of living. There is no marked difference between sexes of children. The proportions below 3 standard deviation from the median of the International Reference Population among children of illiterate mothers is 4.7 times in 1992 and 4.1 times in 1999 as those of children of mothers completed at least high school education. This proportion among children of families with low standard of living is 4.6 times as that among children of families with high standard of living. Clearly then education and living standard have substantial effect on the nutritional status of children. In all the anthropometric measures of under nourishment of children under three years of age in NFHS-2, a substantial reduction is possible if others can achieve the level of the top one-fourth socio-economic status group. For example 78 percent reduction is possible in the percent below –3 SD in weight-for-age. Inequality between mother's educational level and standard of living seem to be very high in all the indicators of under nourishment.

Reproductive Health

It is only in the NFHS-2 certain health problems during pregnancy and delivery complications during three years preceding the survey are asked to women in the reproductive age group. As such we are dealing with self-reported health problems. It is obvious from Table 6 that incidence of health problems during pregnancy is very high. Night blindness, blurred vision, convulsions not from fever, excessive fatigue and anaemia are the health problems more frequently experienced by rural pregnant women than their urban counterpart. Swelling of the legs, body or face is more common among urban than rural pregnant women. Percent reduction in the overall incidence if others also experience the level of top one-fourth socio-economic status category would be 65 for night blindness, 54 for blurred vision, 33 percent for convulsions not from fever and

27 percent for anaemia. In the case of swelling of the legs, body, or face and excessive fatigue, there would be an increase in the incidence contrary to what generally expected.

As regards delivery complications, rural mothers more frequently experience long period of labour than urban mothers (Table 7). On the other hand, caesarean section was performed for 9.7 percent deliveries among urban mothers and it is only 5.5 among rural mothers as reported in the NFHS-1. But these figures increased to 22.8 percent and 12.2 percent respectively by the time of NFHS-2. Detailed study is required in this important issue to understand how for these caesarean sections are genuinely required or otherwise. The percent of deliveries with caesarean section is 31.3 among the top one-fourth of the socio-economic category of mothers. If all others had to experience this, then the deliveries by caesarean section would rise by about 98 percent.

NFHS-2 gathered information on abnormal vaginal discharge and certain symptoms of urinary tract infection during three months preceding the survey from all ever-married women (age 15-49) sample. Except for fever and symptoms of urinary tract infection, which are high among rural women compared to urban women, in all other reproductive health problems there is no difference in the incidence between rural and urban areas (Table 8). All reproductive health problems are associated woman's educational level. The incidence of all the reproductive health problems, abnormal vaginal discharge, vaginal discharge accompanied by itching or irritation, bad odour, severe lower abdominal pain and fever, and symptoms of urinary tract infection, decline with rising level of education of woman. Scheduled caste women experience marginally higher incidence of these problems than others. Clearly the incidence of these reproductive health problems is inversely related to the standard of living. The incidence of any of these problems among those with low standard of living is 1.72 times as high as those with high standard of living. Thus we notice that the urinary tract infection is very closely associated with standard of living and level of education of women. If all women were to experience the incidence of those in the top one-fourth socio–economic category, then there would be a reduction of 15 percent in the incidence of any of these urinary tract infections. As the sample size in the Scheduled Tribe is very small the low incidence of infection among these women cannot be taken at face value. However, it is worth investigating whether the low incidence in this category of women is true and if so the reason for it may be explored.

Table 9 shows the percent often-experienced painful intercourse and percent ever experienced bleeding after intercourse among the sample of married women in the NFHS-2. While no clear differential is observed in the percent of women experienced bleeding after intercourse due to overall low incidence and insufficient sample size, there is

observable differential by woman's level of education, caste, religion, and standard of living in the experience of painful intercourse. There is a negative relationship between level of education of woman and experience of painful intercourse. Scheduled caste women experience it twice as much as those who belong to upper caste (those who do not belong to scheduled caste/tribe or backward class). The proportion experienced painful intercourse is high among Muslim women compared to Hindu or Christian women. Those living a low standard of life experience it twice as high as those living a high standard of life. If all had to experience the incidence of those in the top one-fourth socio-economic category, the incidence of painful intercourse would fall by 20 percent and bleeding after intercourse would fall by 18 percent.

Nutritional status and prevalence of Anaemia

A woman's Body Mass Index (BMI) measures her nutritional status. BMI is the ratio of her weight in kilograms to the square of her height in metres (kg/m^2). This is available only in the NFHS-2. Mean height, percent below 145 cm., mean BMI and percent with BMI below 18.5 kg/m^2 are given by background characteristics of ever-married women in Table 10. Rural-urban comparison shows that there is not much of difference in the mean height of women, but there is appreciable difference in BMI. The mean BMI is less among rural women and the proportion below 18.5 kg/m^2 is twice as much as among urban women. Height and BMI are positively related to the level of education of woman. The proportion of women with BMI below 18.5 kg/m^2 among illiterates is 2.3 times as that among women completed high school. Those completed high school are taller by 2.5 cm than illiterates. Scheduled tribe women are the shortest and more than 55 percent has BMI below 18.5 kg/m^2. This percentage is 4.5 times of the percentage among upper caste women (non-scheduled caste/tribe and not belonging to backward class). Christian women are on an average taller at least by 1.3 cm than Hindu or Muslim women. On the other hand, the proportion with BMI below 18.5 kg/m^2 is the least among Muslim women. This proportion among Hindus is about twice as that of Muslims. Women in families with high standard of living are on an average taller 2.5 cm taller than those in families with low standard of living. BMI is also positively related to the standard of living. The proportion with BMI below 18.5 kg/m^2 is about 4.5 times as high as those enjoying high standard of life. If all women enjoy the socio-economic level of the top one-fourth, there would be a reduction of 28 percent in the percent below 145 cm height, 9 percent improvement in the body mass index and 48 percent reduction in the percent with BMI below 18.5 kg/m^2.

Low level of haemoglobin in the blood is called anaemia. Anaemia is a result of deficiency of iron, folate, vitamin B_{12} or some other nutrients. This is referred as iron-

deficiency anaemia. In NFHS-2 haemoglobin levels of all ever-married women age 15-49 years in the sample households were measured with the help of HemoCue system. Pregnant women with 10.0-10.9 grams/decilitre and non-pregnant women with 10.0-11.9 g/dl are considered to have mild anaemia, 7.0-9.9 g/dl to have moderate anaemia and less than 7.0 g/dl to have severe anaemia. Table 11 shows the percent of women classified as having iron-deficiency anaemia by degree of anaemia. Percent of women anaemic is close to 60 in rural areas and 52 in urban areas. Whatever is the degree of anaemia, mild, moderate or severe, is considered, it declines with increasing level of education of woman. Percent of women anaemic is high among scheduled caste/tribe. Proportion of women anaemic is less among Christian women than Hindu or Muslim women. Percentage of women anaemic of various degree declines with rising standard of living. Even among the top 15 percent of the population, which enjoys better living conditions, about 47 percent are classified to have anaemia. Similarly even among women who have completed high school education the percent classified as having iron-deficiency anaemia is 46. These indicate that anaemia is widely prevalent among all subgroups of women suggesting that something beyond individual socio-economic status that determines the over all level of iron-deficiency anaemia in the women population. Even if all were to enjoy the socio-economic level of the top one-fourth women, the percent with any anaemia would be reduced from 57 percent to 47 percent; a reduction of 17 percent.

Health care utilization

Antenatal and natal care utilization

Proportion of women receiving antenatal care (ANC) from a doctor is more among urban women than rural women (Table 12). Proportion either receiving ANC from paramedics or not receiving ANC is more in rural areas. Level of education of mother and proportion receiving ANC from doctor are positively related and level of education and proportion not receiving ANC are inversely related. During 1988-92 the proportion not receiving ANC among illiterates is 12 times as high as the proportion among those completed high school and in 1996-99 it is about 6 times as high. The percent receiving ANC from doctor among scheduled caste/tribe women is 75 during 1996-99 and it is 88 among others. Standard of living has a positive effect on receiving ANC from doctor and negative effect on receiving ANC from paramedics or not receiving ANC. Close to 97 percent among women enjoying high standard of life receive ANC from doctor and this percent is only 75 among those with low standard of living. Among the top one-fourth of socio-economic category antenatal care provider is doctor in 98 percent of mothers in NFHS-2. An improvement of 16 percent is possible if socio-economic inequality is eliminated.

Percent distribution of births (during the four years preceding NFHS-1 and during three years preceding NFHS-2) to women by number of tetanus toxoid (TT) injections received by mother, percent of births for which mothers received iron and folic acid (IFA) tablets or syrup during pregnancy are given in Table 13 by background characteristics of mothers. Percent received supply for at least three months among those received IFA tablets or syrup and percent consumed all the supply are also given in the table. During 1988-92, TT injections were taken two or more times by about 95 percent of urban mothers and by only 87 percent of rural mothers. Percent of mothers received IFA tablets or syrup was also less in rural than urban mothers. But during 1996-99 the percent of mothers receiving two or more TT injections and percent receiving IFA tablets or syrup were almost the same among urban and rural mothers. This may due to special drive taken by the government. Usually such drives by government health centres are more effective in rural areas. In spite of this still inequality persists between illiterates and better educated. While 99 percent among mothers who completed high school had two or more TT injections, the percent is 93 among illiterate mothers in NFHS-2. Similar results are seen in the case of percent of mothers receiving IFA, percent of mothers receiving supply of IFA for at least three months and percent of mothers who consumed all the supply. We do not find much difference in these aspects in NFHS-2 between scheduled caste/ tribe and others, except in the percent of mothers who consumed three months supply of IFA. Religious differences are not clear as the sample of Christian mothers and Muslim mothers are very small. All the ANC utilizations are positively associated with the standard of living. If all mothers utilise the services as those in the top one-fourth of socio-economic category, the percentage of pregnant women receiving two or more tetanus toxoid injections would be 98 and percent receiving supply of IFA tablets for 3+ months would be 95 and among them consuming all the supply would be 89 percent.

Table 14 provides information on place of delivery of babies to mothers during four years preceding NFHS-1and three years preceding NFHS-2. Percentage of institutional deliveries is high among urban mothers than among rural mothers. Non-institutional deliveries (deliveries at own home or parents' home) constitute 51 percent among mothers living in rural areas during 1988-92 and that is 5 times as high as among urban mothers. Even during 1996-99 the non-institutional deliveries constitute 27.5 percent in rural areas, which is about 4 times as high as in urban areas. Percent of institutional deliveries is positively related to the level of education of mother. For example the percent of institutional deliveries is 45 among illiterates during 1988-92 and it is 89 among mothers who completed high school. The percent of non-institutional deliveries among illiterates during 1996-99 is 37, which is 8.7 times as high as that among mothers who completed high school. Home deliveries are twice high among scheduled caste/tribe mothers as that among others. As the number of Muslim and Christian mothers and deliveries to

them are small in the sample religious comparison is not possible. There is a strong relationship between institutional deliveries and standard of living. Home deliveries among mothers with low standard of living constitute 31 percent, which is 9 times as high as that for mothers with high standard of living. It is also seen that home delivery is very less and the percent of deliveries in health institution (96; 28 in public and 68 in private) is very high among the top one-fourth socio-economic category. Hence reducing inequality will substantially reduce home delivery and improve the percent of institutional (public and private) delivery.

Table 15 provides the distribution of births by type of assistance at delivery by background characteristics of mothers. During 1996-99 52 percent of deliveries to rural mothers had the assistance of a doctor and this percentage is 75 among urban mothers. Level of education of mother has a strong effect on the type of assistance at delivery. About 86 percent among mothers completed high school and 43 percent among illiterates had the service of a doctor during delivery during 1996-99. There is also a marked difference in the percent of deliveries receiving the assistance of a doctor between scheduled caste/ tribe mothers and others. There is a vast difference in the percent of deliveries attended by a doctor between mothers with different level of living. Doctors attended 45 percent of deliveries to mothers with low standard of living, while this percentage among mothers with high standard of living is 92. Among the top one-fourth of the socio-economic group doctors attend 86 percent of the deliveries and ANM/Nurse/midwife/LHVs attend the rest. There is not a single delivery attended by a traditional birth attendant in this group. Reduction in socio-economic inequalities would drastically improve the percent of deliveries attended by qualified persons.

Child Immunization and Treatment for Illness

Table 16 provides details of childhood vaccinations by background characteristics. In the Table Polio 0 refers to polio vaccine given at the time of birth and Polio 1 is vaccine given about six weeks after birth. In the table only children of age 12-23 months at the time of survey are considered. In the year 1999 the coverage is close to 100 percent in all vaccinations except for Polio 0 and Measles. Even at the level of reaching close to 100 percent vaccinations, differences by place of residence, education of mother, caste, standard of living and sex of child persists. Proportion of rural children vaccinated is consistently less in each vaccine. Percent fully vaccinated is only 85 percent among rural children, whereas it is 97 percent among urban children. There is a wide variation in the proportion fully vaccinated between children of mothers with different levels of education. Children of illiterate mothers are very much disadvantaged. Percent fully vaccinated is 85 among children of illiterate mothers and is 97 among children of high

school completed mothers in 1999. As regards Polio 0 the percentages are 77 and 94 respectively. Percent fully vaccinated among scheduled caste/tribe children is 84 and among others is 91. The percentage of children fully vaccinated ranges from 86 to 98 between children from families with low standard of living and high standard of living. Female children were disadvantaged in 1992, but the situation improved and the differences narrowed between girls and boys by 1999.

Between NFHS-1 and NFHS-2 survey dates there has been a substantial improvement in childhood vaccination and the differences between population subgroups have narrowed. For example, the difference in the percent fully vaccinated among children of illiterate mothers and high school completed mothers narrows from 32 percentage points in 1992 to 12 points in 1999. But the gap between urban and rural children and between scheduled caste/tribe children and others continued during the period. It is also to be observed that the level of vaccination reaches very close to 100 percent among those in the top one-fourth of the socio-economic category except for Polio 0 and Measles. This implies that if all attained the level of the top one-fourth category, vaccination in Tamil Nadu would be 95 percent in the case of Polio 0 and Measles and close to 100 percent in all the others.

The percent of children receiving vaccinations from public medical sector is more among rural children, children of less educated mothers, scheduled caste/tribe children, children from Hindu families and children from families with low standard of living (Table 17). However, there is no difference in this percentage between sexes of children. This clearly shows socio-economically backward group depends heavily on public medical sector for immunization services. Even among the top one-fourth of the socio-economic category 57 percent depended on the public sector for vaccination services. This suggests that public sector free basic health services should continue and that it reaches the lowest socio-economic sections of the society better than the private sector.

As vitamin A deficiency is a major cause for blindness among children the National Programme on Prevention of Blindness administers oral vitamin A every six months starting at nine months of age to all children under age five years. NFHS-2 provides the percent of children of age 12-35 months who ever had one dose and percent received at least once during the preceding six months of survey (Table 18). Over all the intake is less, particularly so among children from rural area, of less educated mothers, scheduled caste/tribe children, Hindu children, and children from families with low standard of living. The percent among children of high school completed mothers is double as that among children of illiterate mothers. Between families with low and high standard of life the percent of children who received vitamin A ranges from 13 to 23. There is no difference in the percent receiving vitamin A dose between male and female children.

As far as vitamin A supplementation is concerned, there is not much of inequality between socio-economic categories, since even among the top-one fourth of socio-economic group the proportion receiving vitamin A supplementation is less.

Once again we do not find any difference in the percent of children with ARI taken to a health facility or provider between male and female children (Table 19). Mother's education shows a positive effect. The improvement would be 8 percent in the percent taken to a health facility if all children had he opportunity as those in the top one-fourth socio-economic category. Percent of children taken to a health facility or provider among children suffered from fever does vary by place of residence, mother's education and caste/tribe (Table 20). Rural children, children of illiterate mothers and scheduled caste/ tribe children are disadvantaged. The percent of children taken to a health facility or provider is marginally high among male children than among female children.

Both in NFHS-1 and NFHS-2, treatment for children who had diarrhoea two weeks prior to the date of survey were asked. Percent taken to a health facility or provider, percent of children for whom oral rehydration solution (ORS) made from a packet given and percent not given any treatment by background characteristics are provided in Table 21. Urban children, children of better educated mothers, non-scheduled caste/tribe children and male children have better chance of receiving the services from a health facility or provider than their counterparts. While 26 percent of rural children who had diarrhoea did not receive any treatment, 19 percent of urban children did not receive. The percent of sick children who did not receive any treatment is as high as 32 among children of illiterate mothers and this percentage is about 8 among children of high school completed mothers in 1999. There is a clear gender difference in this aspect. The percentage not given any treatment is 27 among girls and 17 among boys in 1999. In the top one-fourth of the socio-economic status group, the percent of children receiving the services of health facility or receiving ORS fluid when suffered from diarrhoea is substantially high. This suggests that there is inequality in the utilization health services between socio-economic groups.

Summary and Conclusion

Inequality is found to exist in health outcome between social and economic status groups. Inequalities between urban-rural areas, between educational levels, between community groups and between levels of standard of living are found to be very high. It has been noticed that elimination of inequality itself can reduce the disease burden and mortality substantially in the population.

There is also inequality between population sub-groups in the utilization of health care programme. Hence improvement in access to health services and utilization of health care services, particularly the services provided by the government sector, for the poorer socio-economic groups has great potential in reducing the disease burden in the population. A clear example is the child immunization drive, which reached effectively all sections of the population, and thus we find not much of inequalities between population subgroups to exist in the level of immunization.

Inequality in disease burden between population subgroups could be explained by genetic factors (as inbreeding is very high in Tamil Nadu), environment, nutrition, access to health services and health care service utilization. In these the contribution of genetic factors to inequality in disease burden (particularly the kind of diseases we have been concerned with) is negligible. Hence the inequalities in health outcome we observed largely due to the other three factors. Socio-economic status determines the environment in which people live, access to health services and utilization of these services. In these access and utilization of health services can be improved by providing effective subsidised services at the door steps of the households like the universal immunization programme, which had good impact on childhood preventable diseases preventable by immunization. All other aspects of health, including reproductive and child health, programme need such an approach to narrow down or eliminate inequalities in health outcome attributable to access and utilization of health care services. Inequalities in health outcome attributable to environment can largely be tackled by a similar approach by taking health education and positive health activities closer to the population.

Our analysis clearly shows that there could be substantial improvement in health outcome if the entire population were to enjoy the socio-economic standard of the top one-fourth of the population. This clearly implies existence of inequalities in health status between socio-economic subgroups of population and potential for substantial reduction in disease burden and mortality by narrowing these inequalities.

Acknowledgements

Help received from Dr. N. Thenmozhi, Dr. J. Sheela and Ms. S. Rani in the analysis of data is gratefully acknowledged. Thanks are also due to Dr. V. Balakrishnan Nair for his valuable comments on an earlier draft.

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Table 1

Crude death rates and age-sex specific death rates from NFHS-1&2 and Sample Registration System for corresponding years.*

Age group	NFHS-1 (1990-91)		SRS (1991)		NFHS-2 (1997-98)		SRS (1997)	
	Male	Female	Male	Female	Male	Female	Male	Female
0- 4	21.6	13.8	14.4	17.9	11.7	13.9	12.2	14.6
5-14	1.8	1.2	1.7	1.9	1.9	1.8	0.8	0.7
15-49	3.9	3.4	4.4	3.0	5.3	3.9	3.8	2.5
50-59	35.9[a]	33.5[a]	35.4[a]	29.6[a]	22.4	6.6	17.6	10.5
60 +	—	—	—	—	63.6	52.5	53.5	44.0
Crude death rate	10.3	9.0	9.4	8.2	12.2	9.3	8.8	7.2

** Based on deaths in the sample households during the preceding two years from the date of survey.*

[a] *Figures refer to the broader age group of 50 and above.*

Source: Table 8.2 of NFHS-1, 1992 and Table 6.1 of NFHS-2, 1999.

Table 2

Inequalities in mortality during childhood ages in Tamil Nadu during the 10-year period preceding the National Family Health Surveys (NFHS-1, 1992 and NFHS-2, 1999).

Background characteristics and reference period	Neonatal Mortality Rate	Post-neonatal Mortality Rate	Infant Mortality Rate ($_1q_0$)	Child Mortality Rate ($_4q_1$)	Under-five Mortality Rate ($_5q_0$)	Relative risk of $_5q_0$
All 1989-99	*35.9*	*15.0*	*51.0*	*14.3*	*64.5*	—
Index for top one fourth@	18.9	9.0	27.9	7.0	34.7	
Percent change@	47.4	40.0	45.3	51.0	46.2	—
Residence (1982-92)						
Urban	36.1	23.9	60.0	15.1	74.2	1.00
Rural	51.7	24.5	76.2	31.7	105.5	1.42
1989-99						
Urban	27.0	13.4	40.4	8.6	48.7	1.00
Rural	40.5	15.9	56.3	17.1	72.5	1.49
Percent Reduction+	24.8	10.7	20.8	39.9	24.5	—
Mother's education **(1982-92)**						
Illiterate	59.6	29.5	89.1	35.9	121.9	3.08
Literate, < middle school complete	38.4	23.2	61.6	23.6	83.7	2.11
Middle school comp.	(42.0)	(10.1)	(52.1)	(7.7)	(59.4)	1.50
High sch. comp. & above	15.9	17.7	33.6	6.2	39.6	1.00
1989-99						
Illiterate	44.9	19.2	64.1	19.1	82.0	2.65
Literate,< middle school complete	41.7	11.0	52.6	8.4	60.6	1.96
Middle school comp.	19.7	14.0	33.7	15.1	48.3	1.56
High sch. comp. & above	15.6	9.5	25.1	6.0	30.9	1.00
Percent Reduction+	56.5	36.7	50.8	58.4	52.1	—

***Caste/Tribe* (1982-92)**						
Schedule caste/tribe	59.1	30.9	90.0	41.0	127.3	1.50
Others (Non-SC/ST)	42.3	22.4	64.8	21.3	84.7	1.00
1989-99						
Schedule caste/tribe	29.2	12.6	41.8	22.5	63.3	1.00
Others(Non-SC/ST)	37.1	15.5	52.7	10.9	63.0	1.00
Percent Reduction+	18.7	16.0	61.3	23.8	2.3	—
Religion						
1989-99						
Hindu	35.7	14.4	50.1	14.7	64.2	1.15
Muslim	(32.2)	(18.9)	(51.1)	(5.2)	(56.0)	1.00
Percent Reduction+	10.3	4.3	1.8	63.6	13.2	—
Standard of Living						
1989-99						
Low	42.5	19.5	62.0	18.0	78.8	2.32
Medium	34.4	13.0	47.4	13.6	60.4	1.78
High	23.3	7.1	30.3	3.7	33.9	1.00
Percent Reduction+	35.1	52.7	41.4	74.1	47.4	—
Sex of child						
1982-92						
Male	53.5	26.0	79.4	29.0	106.1	1.00
Female	38.9	22.7	61.6	23.2	83.4	0.79
1989-99						
Male	35.3	14.9	50.2	12.7	62.3	1.00
Female	36.6	15.2	51.8	15.8	66.8	1.07
Percent Reduction+	1.7	0.6	1.6	11.2	3.4	—

( ) Based on 250-499 children surviving at the beginning of the interval.

** Computed by subtracting neonatal mortality rates from infant mortality rates.*

+ Percent Reduction in the absence of inequality

@ Index for the top one-fourth of the socio-economic status category and the percent change if all enjoy the socio-economic status of top one-fourth.

Source: Tables 8.4 and 8.5 of NFHS-1, 1992 and Tables 6.3 and 6.4 of NFHS-2, 1999.

Table 3a:

Urban-rural and gender differences in the prevalence of five health conditions from NFHS-1, 1992.

Health condition	Number of persons per 1000 suffering from the health condition						
	Urban	Rural	Male	Female	All	Percent Reduction+	
						U/R	M/F
Partial blindness	5.1	7.0	5.9	6.7	6.3	19.0	6.3
Complete blindness	1.7	2.2	1.4	2.6	2.0	15.0	30.0
Tuberculosis	4.3	8.5	8.6	5.5	7.0	38.6	21.4
Leprosy	0.1	3.1	3.1	1.1	2.1	95.2	47.6
Physical impairment of limbs	6.8	8.0	9.9	5.3	7.6	10.5	30.3
Malaria during the last three months	8.8	4.1	7.3	4.2	5.8	29.3	27.6

+ Percent Reduction in the absence of inequality

Source: Table 8.1 of NFHS-1, 1992.

Table 3b

Urban-rural and gender differences in the prevalence of asthma, tuberculosis, jaundice and malaria from NFHS-2, 1999.

Health condition	Number of persons per 1000 suffering from the health condition						
	Urban	Rural	Male	Female	All	Percent Reduction+	
						U/R	M/F
Asthma	13.2	16.7	16.2	14.7	15.5	14.8	5.2
Tuberculosis*	4.3	5.1	6.6	3.0	4.8	10.4	37.5
Medically treated tuberculosis	3.7	4.6	6.0	2.6	4.2	11.9	38.1
Jaundice during the past 12 months	11.9	11.2	13.4	9.5	11.4	1.8	16.7
Malaria during the last three months	3.5	4.0	3.8	3.8	3.8	7.9	0.0

** Includes medically treated tuberculosis*

+ Percent Reduction in the absence of inequality

Source: Table 6.5 of NFHS-2, 1999.

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Table 4a

Prevalence of acute respiratory infection, fever and diarrhoea among children under five years of age during the two weeks before the survey, 1992.

Background characteristics	Percentage of children suffering in previous two weeks from				Any diarrhoea in previous 24 hrs. **
	Cough accompanied by fast breathing	Fever	Diarrhoea*		
			Any	Bloody	
All 1999	8.6	17.7	12.7	1.3	5.2
Residence					
Urban	6.8	19.4	12.2	1.6	4.7
Rural	9.6	16.8	12.9	1.1	5.5
Percent Reduction+	20.9	5.1	3.9	—	—
Mother's education					
Illiterate	10.6	18.1	13.1	1.5	4.8
Literate,<middle school complete	10.2	19.4	11.5	1.3	6.1
Middle school complete	5.4	18.0	15.6	1.0	5.4
High school complete and above	2.8	13.9	10.8	0.8	4.8
Percent Reduction+	67.4	21.5	15.0	—	—
Caste/tribe					
Scheduled caste	9.8	16.5	12.8	0.8	5.6
Others (non-SC/ST)	8.2	18.1	12.6	1.4	5.1
Percent Reduction+	4.9	6.8	0.8	—	—
Religion					
Hindu	8.6	16.8	13.0	1.1	5.6
Muslim	4.9	25.2	14.6	4.1	4.1
Christian	13.7	22.1	5.3	—	2.1
Percent Reduction+	43.0	5.1	58.3	—	—
Sex of child					
Male	9.0	18.0	12.0	1.5	5.1
Female	8.3	17.5	13.2	1.1	5.3
Percent Reduction+	3.5	1.1	5.5	—	—

— Less than 0.05 percent.

** includes diarrhoea in the past 24 hours*

*** includes diarrhoea with blood.*

+ Percent Reduction in the absence of inequality

Source: Table 9.11 of NFHS-1, 1992.

Table 4b

Prevalence of acute respiratory infection, fever and diarrhoea among children under three years of age during the two weeks before the survey, 1999.

Background characteristics	Percentage of children suffering in previous two weeks from			
	Cough accompanied by fastbreathing	Fever	Diarrhoea*	
			Any	Bloody
All	10.3	22.3	14.4	1.7
Index for top one fourth@	7.8	21.6	11.7	1.4
Percent change@	24.3	3.1	18.8	17.6
Place of residence				
UrbanRural	10.7	23.1	15.0	2.0
Percent Reduction+	10.0	21.9	14.0	1.6
Mother's education	2.9	1.8	2.8	—
Illiterate	13.6	21.1	15.8	2.0
Literate,<middle school complete	9.9	24.0	14.5	1.6
Middle school complete	10.2	23.2	12.9	2.1
High school complete and above	4.5	21.7	12.6	1.0
Percent Reduction+	56.3	2.7	12.5	—
Caste/tribe				
Scheduled caste	11.8	22.7	12.2	0.7
Others (non-SC/ST)	9.9	22.0	15.3	2.1
Percent Reduction+	3.9	1.3	15.3	—
Religion				
Hindu	9.9	22.2	14.1	1.7
Muslim	11.1	22.5	17.6	1.5
Christian	13.3	25.4	13.8	2.0
Percent Reduction+	3.9	0.4	4.2	—
Standard of living				
LowMedium	12.6	23.6	16.9	2.0
High	10.0	21.2	13.5	1.8
Percent Reduction	3.6	22.7	10.4	0.6
	65.0	4.9	27.8	—
Sex of child				
Male	12.0	22.2	14.7	1.3
Female	8.4	22.5	14.0	2.2
Percent Reduction+	18.4	0.4	2.8	—

** Includes diarrhoea in the past 24 hours; ** Includes diarrhoea with blood.*

+ Percent Reduction in the absence of inequality betwee4n sub category in the variable;

@ Index for the top one-fourth of the socio-economic status category and the percent change, if all enjoy the socio-economic status of top one-fourth

Source: Table 6.7 of NFHS-2, 1999

Table 5a

Nutritional status of children under four years of age, 1992.

Background characteristics	Weight-for-age	
	Percentage below -3 SD*	Percentage below -2 SD*
All 1999	12.7	46.6
Residence		
Urban	10.9	37.3
Rural	13.8	52.1
Percent Reduction+	14.2	20.0
Mother's education		
Illiterate	16.1	56.2
Literate,<middle school complete	14.2	45.0
Middle school complete	10.6	42.9
High school complete and above	3.4	27.1
Percent Reduction+	73.2	41.8
Caste/tribe		
Scheduled caste	18.3	53.0
Others (non-SC/ST)	11.4	45.1
Percent Reduction+	10.2	3.2
Religion		
Hindu	13.0	47.0
Muslim	13.3	45.8
Christian	9.0	42.3
Percent Reduction+	29.1	9.2
Sex of child		
Male	11.5	43.1
Female	13.8	49.7
Percent Reduction+	9.4	7.5

* *Percentage of children who are more than two or three standard deviations below the median of the international reference population.*

\+ *Percent Reduction in the absence of inequality*

Source: Tables 10.5 and 10.6 of NFHS-1, 1992.

Table 5b

Percentage of children under three years of age classified as undernourished by anthropometric measures, 1999.

Background characteristics	Weight-for-age		Height-for-age		Weight-for-height	
	Percent Below					
	-3 SD*	-2 SD*	-3 SD*	- 2SD*	-3 SD*	-2 SD*
All 1999	10.6	36.7	12.0	29.4	3.8	19.9
Index for top one fourth@	2.3	13.5	3.9	9.7	2.6	13.9
Percent change@	78.3	63.2	67.5	67.0	31.6	30.2
Place of residence						
Urban	9.6	33.5	11.8	27.1	4.5	20.6
Rural	11.1	38.3	12.2	30.6	3.4	19.5
Percent Reduction+	9.4	8.7	1.7	7.8	11.8	2.1
Mother's education						
Illiterate	16.0	47.8	17.8	39.3	4.0	22.3
Literate,<middle school complete	8.8	37.5	8.1	28.5	4.4	20.7
Middle school complete	9.1	31.9	10.2	23.6	4.1	17.9
High school complete and above	3.9	18.8	7.8	17.0	2.1	16.3
Percent Reduction+	63.2	48.8	35.0	42.2	44.7	18.1
Caste/tribe						
Scheduled caste	14.9	48.1	16.8	41.2	3.2	21.6
Other backwardClasses	9.1	32.8	10.1	25.1	4.0	19.3
Percent Reduction+	14.2	10.6	15.8	14.6	15.8	3.0
Religion						
Hindu	10.4	36.9	12.1	29.3	3.9	19.8
Muslim	12.3	38.7	13.1	32.1	1.2	21.4
Christian	8.8	28.2	8.2	25.1	4.8	16.6
Percent Reduction+	17.0	23.2	31.7	14.6	68.4	16.8
Standard of living						
Low	15.6	47.2	18.0	37.9	4.0	21.8
Medium	8.3	35.4	9.3	26.7	4.3	19.9
High	3.4	10.3	3.9	11.6	1.6	15.5
Percent Reduction+	68.0	72.0	67.5	60.5	58.0	22.1
Sex of child						
Male	11.6	35.8	12.9	29.9	3.4	20.7
Female	9.5	37.6	11.1	28.9	4.2	19.0
Percent Reduction+	10.4	2.5	7.5	1.7	10.5	4.5

** Expressed in standard deviation units (SD) from the median of the International Reference Population. ; + Percent Reduction in the absence of inequality*

@ Index for the top one-fourth of the socio-economic status category and the percent change if all enjoy the socio-economic status of top one-fourth

Source: Tables 7.9 and 7.10 of NFHS-2, 1999.

Table 6

Percentage of mothers experiencing specific health problems during pregnancy of births during the three years preceding the survey, NFHS-2, 1999.

Problem during pregnancy	Urban	Rural	Total	U/R Percent Reduction+	Index for top one fourth@	Percent change@
Night blindness	2.0	4.6	3.7	45.9	1.3	64.9
Blurred vision	4.1	6.6	5.7	28.1	2.6	54.4
Convulsions not from fever	1.0	3.1	2.4	58.3	1.6	33.3
Swelling of the legs, body, or face	22.3	18.4	19.8	7.1	23.1	-16.7
Excessive fatigue	24.3	26.3	25.6	5.1	26.5	-3.5
Anaemia	13.7	15.4	14.8	7.4	10.8	27.0
Vaginal bleeding	2.4	2.1	2.2	4.5	2.1	4.5

+ Percent Reduction in the absence of inequality

@ Index for the top one-fourth of the socio-economic status category and the percent change if all enjoy the socio-economic status of top one-fourth.

Source: Table 8.1 of NFHS-2, 1999.

Table 7

Delivery complications during the delivery of live births in the four years preceding the survey, NFHS-1, 1992 and during three years preceding the survey, NFHS-2, 1999.

Complication at delivery	Urban	Rural	Total	U/R Percent Reduction+	Index for top one fourth@	Percent change@
NFHS-1						
No complication	79.0	81.3	80.5	—	—	—
Any complication	21.0	18.7	19.5	—	—	—
Caesarean section	9.7	5.5	7.0	—	—	—
Use of forceps	5.1	4.5	4.7	—	—	—
Excessive bleeding	0.8	0.6	0.7	—	—	—
Long period of labour	4.0	6.3	5.5	—	—	—
Delayed delivery of placenta	1.0	1.0	1.0	—	—	—
Other	0.8	0.8	0.8	—	—	—
NFHS-2						
Delivered by caesarean section	22.8	12.2	15.8	22.8	31.3	-98.1

+ Percent Reduction in the absence of inequality

@ Index for the top one-fourth of the socio-economic status category and the percent change if all enjoy the socio-economic status of top one-fourth

Source: Table 9.6 of NFHS-1, 1992 and Table 8.8 of NFHS-2, 1999.

Table 8

Percentage of ever-married women reporting abnormal vaginal discharge and symptoms of urinary tract infection during the three months preceding the survey, NFHS-2, 1999.

Background characteristics	Any abnormal vaginal discharge	Vaginal discharge accompanied by:					Symptoms of a urinary tract infection	Anyof these
		Itching or irritation	Bad odour	Severe lower abdominal pain	Fever	Other problem		
All ever-married women	18.6	10.0	3.4	13.1	4.7	3.2	12.2	23.9
Index for top one fourth@	15.6	8.3	1.9	10.0	2.1	2.9	9.3	20.3
Percent change@	16.1	17.0	44.1	23.7	55.3	9.4	23.8	15.1
Residence								
Urban	18.7	9.5	2.9	12.7	3.7	3.7	10.3	23.1
Rural	18.5	10.3	3.6	13.3	5.2	3.0	13.1	24.4
Percent Reduction+	0.5	5.0	14.7	3.1	21.3	6.3	15.6	3.4
Education								
Illiterate	19.9	10.9	4.5	14.7	5.9	3.3	14.0	25.5
Literate, < middle school complete	18.6	9.9	2.2	13.0	4.5	3.1	11.8	24.2
Middle school complete	19.1	10.5	3.5	11.1	4.0	3.9	10.4	24.2
High school complete and above	14.1	7.0	1.7	10.0	1.8	2.7	8.6	18.5
Percent Reduction+	24.2	70.0	50.0	23.7	61.7	15.6	30.0	22.6

Caste/tribe								
Scheduled caste	19.9	10.9	4.7	13.8	5.9	3.5	13.4	25.4
Scheduled tribe	(9.2)	(3.1)	(0.0)	(9.2)	(6.2)	(3.1)	(6.1)	(12.3)
Other backward class	18.3	9.7	2.9	12.9	4.3	3.2	11.9	23.7
Other	17.8	13.0	3.7	14.0	5.4	0.8	9.0	19.6
Percent Reduction+	50.5	69.0	100.0	29.8	8.5	3.1	50.0	48.5
Religion								
Hindu	18.6	10.0	3.5	13.1	4.9	3.3	12.4	24.1
Muslim	17.4	10.0	1.8	12.7	2.4	3.3	9.2	20.6
Christian	18.8	9.1	3.1	12.8	4.0	3.1	10.4	23.7
Percent Reduction+	6.5	9.0	47.1	3.1	49.0	3.1	24.6	13.8
Standard of living								
Low	20.9	11.2	4.7	15.1	5.9	3.6	14.4	26.9
Medium	19.1	10.2	2.7	13.1	4.5	3.6	11.8	24.4
High	11.1	6.3	1.6	7.5	1.9	1.3	8.0	15.6
Percent Reduction+	40.3	37.0	53.0	42.7	59.6	59.3	34.4	34.7

( ) Based on 25-49 un weighted cases.

+ Percent Reduction in the absence of inequality

@ Index for the top one-fourth of the socio-economic status category and the percent change if all enjoy the socio-economic status of top one-fourth

Source: Table 8.11 of NFHS-2, 1999.

Table 9

Percentage of currently married women reporting painful intercourse or bleeding after intercourse, NFHS-2, 1999.

Background characteristics	Painful intercourse (often)	Bleeding after intercourse (ever)*
All currently married women	8.5	2.2
Index for top one fourth@	6.8	2.6
Percent change@	20.0	18.2
Residence		
Urban	8.1	3.1
Rural	8.7	1.8
Percent Reduction+	4.7	18.2
Education		
Illiterate	9.3	2.1
Literate, < middle school complete	8.5	1.5
Middle school complete	8.5	3.2
High school complete and above	6.2	2.9
Percent Reduction+	27.1	28.0
Caste/tribe		
Scheduled caste	9.9	2.0
Scheduled tribe	(6.6)	(0.0)
Other backward class	8.2	2.4
Other	4.8	0.4
Percent Reduction+	43.5	81.8
Religion		
Hindu	8.4	2.2
Muslim	10.7	2.7
Christian	6.9	2.0
Percent Reduction+	18.8	9.1
Standard of living		
Low	10.5	2.0
Medium	8.1	2.4
High	4.9	2.3
Percent Reduction+	42.4	9.1

( ) Based on 25-49 unweighted cases.

+ Percent Reduction in the absence of inequality

@ Index for the top one-fourth of the socio-economic status category and the percent change if all enjoy the socio-economic status of top one-fourth

Source: Table 8.11 of NFHS-2, 1999.

Table 10

Mean height, percentage with height below 145 cm, mean body mass index (BMI) and percentage with BMI below 18.5 kg/m² among ever-married women, NFHS-2, 1999.

Background characteristic	Height Mean height (cm)	Percent below 145 cm	Weight-for-height[1]	
			Mean body mass index (BMI)	Percent with BMI below 18.5 kg/m²
All ever-married women	151.5	12.0	21.0	29.0
Index for top one fourth@	152.9	8.6	22.8	15.0
Percent change@	0.9	28.3	8.6	48.3
Residence				
Urban	151.5	12.6	22.4	17.5
Rural	151.5	11.6	20.2	35.2
Percent Reduction+	–	5.0	6.7	21.4
Education				
Illiterate	150.7	14.9	19.9	37.2
Literate, < middle school complete	151.6	10.1	21.5	24.5
Middle school complete	152.0	10.3	21.7	22.6
High school complete and above	153.2	7.4	22.6	16.2
Percent Reduction+	–	24.2	7.6	28.3
Caste/tribe				
Scheduled caste	150.6	15.5	19.8	38.1
Scheduled tribe	149.5	12.7	18.5	56.1
Other backward class	151.7	11.0	21.3	26.3
Other	153.2	5.8	23.1	12.4
Percent Reduction+	–	29.2	10.0	93.4
Religion				
Hindu	151.4	12.1	20.8	30.3
Muslim	151.2	13.9	23.1	15.9
Christian	152.7	8.9	22.0	20.8
Percent Reduction+	–	15.8	10.0	4.5
Standard of living				
Low	150.5	14.7	19.5	40.2
Medium	151.8	10.9	21.2	26.4
High	153.0	8.2	23.9	9.0
Percent Reduction+		22.5	13.8	38.6

+ Percent Reduction in the absence of inequality

@ Index for the top one-fourth of the socio-economic status category and the percent change if all enjoy the socio-economic status of top one-fourth

Source: Table 7.3 from NFHS-2 report

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Table 11

Percent of ever-married women classified as having iron-deficiency anaemia by degree of anaemia, NFHS-2, 1999.

Background Characteristic	Percent of women with any anaemia	Percent of women with		
		Mild anaemia	Moderate anaemia	Severe anaemia
All ever-married women	56.5	36.7	15.9	3.9
Index for top one fourth@	46.9	34.4	11.4	1.1
Percent change@	17.0	6.3	28.3	71.8
Residence				
Urban	51.6	35.7	12.3	3.6
Rural	59.1	37.3	17.8	4.1
Percent Reduction+	8.7	2.7	22.6	7.7
Education				
Illiterate	62.0	39.2	18.3	4.5
Literate, < middle school complete	53.2	34.9	14.2	4.1
Middle school complete	54.8	34.8	16.7	3.4
High school complete and above	46.1	33.4	10.4	2.3
Percent Reduction+	18.4	9.0	35.3	41.0
Caste/tribe				
Scheduled caste	64.2	41.4	18.9	3.9
Scheduled tribe	61.4	42.2	19.2	0.0
Other backward class	54.2	35.2	15.0	4.0
Other	49.4	35.7	13.3	0.4
Percent Reduction+	12.6	2.7	16.4	100.0
Religion				
Hindu	56.8	37.1	15.8	3.8
Muslim	59.3	35.7	18.1	5.5
Christian	48.0	31.0	13.5	3.5
Percent Reduction	15.0	15.5	15.1	10.3
Standard of living				
Low	65.1	39.8	20.3	5.1
Medium	52.6	34.6	14.5	3.5
High	46.9	35.4	9.4	2.1
Percent Reduction+	17.0	5.7	40.9	46.2

+ Percent Reduction in the absence of inequality

@ Index for the top one-fourth of the socio-economic status category and the percent change if all enjoy the socio-economic status of top one-fourth

Source: Table 7.4 of NFHS-2 report.

Table 12

Percent distribution of live births by source of antenatal care (ANC) during pregnancy in Tamil Nadu during the four years preceding the NFHS-1, 1992 and three years preceding NFHS-2, 1999.

Background Characteristics	ANC only at home from health worker	Antenatal care provide (outside home)*		No ANC	Missing
		Doctor	Other health professional		
All					
1992	16.1	70.6	7.5	5.5	0.3
1999	4.4	84.3	9.9	1.2	0.3
Index for top one fourth@	1.2	98.0	0.9	0.0	0.0
Percent change@	72.7	16.3	90.9	100.0	100.0
Residence					
1992					
Urban	5.3	87.6	3.8	3.0	0.3
Rural	22.2	61.0	9.6	6.9	0.3
1999					
Urban	2.5	90.3	6.2	0.8	0.2
Rural	5.4	81.1	11.7	1.3	0.4
Percent Reduction+	43.2	7.1	37.4	33.3	33.3
Mother's education					
1992					
Illiterate	25.4	54.5	10.2	9.6	0.3
Literate,<middle school complete	11.0	79.0	7.0	3.1	—
Middle school complete	7.9	82.8	7.4	0.9	0.9
High school complete and above	3.4	95.5	—	0.8	0.4
1999					
Illiterate	8.7	74.7	13.9	2.3	0.3
Literate,<middle school complete	2.5	86.1	10.2	0.3	0.8
Middle school complete	1.4	89.8	8.3	0.5	0.0
High school complete and above	0.9	95.6	2.5	0.4	0.1
Percent Reduction+	79.5	13.4	74.7	75.0	100.0

Caste/tribe					
1992					
Scheduled caste/tribe	25.9	53.7	11.8	8.3	0.3
Others (non-SC/ST)	13.6	74.9	6.4	4.7	0.3
1999					
Scheduled caste/tribe	7.5	74.8	16.7	1.1	0.0
Others (non-SC/ST)	3.1	87.6	7.6	1.2	0.5
Percent Reduction+	29.5	3.9	23.2	8.3	100.0
Religion					
1992					
Hindu	17.9	68.5	7.8	5.7	0.2
Muslim	2.3	87.6	7.8	1.6	0.8
Christian	8.6	79.0	3.8	7.6	1.0
1999					
Hindu	4.9	83.8	10.0	1.0	0.4
Muslim	1.1	84.8	10.4	3.7	0.0
Christian	0.0	95.1	4.5	0.0	0.4
Percent Reduction+	100.0	12.8	54.5	100.0	100.0
Standard of living					
1999					
Low	6.6	74.5	16.3	2.1	0.5
Medium	3.2	88.9	7.1	0.6	0.3
High	1.3	96.7	1.4	0.6	0.0
Percent Reduction+	70.5	14.7	85.9	50.0	100.0

Note: Any pregnancy related care provided is called ANC.

— Less than 0.05 percent.

** Includes women who received ANC outside the home irrespective of whether they received ANC at home from a health worker. In case of more than one provider, one with the highest qualifications is considered.*

+ Percent Reduction in the absence of inequality

@ Index for the top one-fourth of the socio-economic status category and the percent change if all enjoy the socio-economic status of top one-fourth.

Source: Table 9.1 form NFHS-1 and Table 8.2 from NFHS-2.

Table 13

Percent distribution of births by the number of tetanus toxoid injections received by mother, percent of births for which mothers received iron and folic acid (IFA) tablets or syrup during pregnancy, among those received IFA tablets or syrup percent received supply for at least three months and percent consumed all the supply in Tamil Nadu from NFHS-1, 1992 and NFHS-2, 1999.

Background Characteristics	Number of tetanus toxoid injections				Percent given IFA tablets or syrup	Percent received supply for 3+ months	Percent consumed all the supply
	None	One	Two or more	Unknown			
ALL 1992	6.3	3.4	90.1	0.2	84.1	NA	NA
ALL 1999	2.2	2.3	95.4	0.1	93.2	90.3	80.5
Index for top one fourth@	0.0	1.7	98.3	0.0	95.4	94.6	88.6
Percent change@	100.0	26.1	3.0	100.0	2.4	4.8	10.1
Residence							
1992							
Urban	3.5	1.7	94.9	—	88.3	NA	NA
Rural	7.9	4.3	87.4	0.3	81.7	NA	NA
1999							
Urban	2.1	3.0	94.6	0.3	92.9	89.0	82.8
Rural	2.3	1.9	95.9	0.0	93.3	91.0	79.4
Percent Reduction+	4.5	17.1	0.5	100.0	0.1	0.8	2.9
Education							
1992							
Illiterate	11.6	5.2	83.1	0.1	79.1	NA	NA
Literate, < middle school complete	2.6	1.9	95.2	0.2	84.7	NA	NA
Middle school complete	0.9	1.4	97.2	0.5	93.5	NA	NA
High school complete and above	0.8	1.9	97.3	—	90.2	NA	NA
1999							
Illiterate	4.0	2.6	93.1	0.2	91.2	86.7	75.7
Literate, < middle school complete	1.4	2.7	95.9	0.0	92.8	90.8	80.8
Middle school complete	1.9	2.3	95.7	0.1	93.2	91.8	82.9
High school complete and above	0.0	1.0	99.0	0.0	97.3	95.0	86.9
Percent Reduction+	100.0	56.5	3.8	100.0	4.4	5.2	8.0

Caste/tribe							
1992							
Scheduled caste/ tribe	11.2	4.6	83.9	0.3	82.5	NA	NA
Other (non-SC/ST)	4.9	3.0	91.9	0.1	84.5	NA	NA
1999							
Scheduled caste/ tribe	2.6	1.5	95.6	0.3	92.6	89.5	71.1
Other (non-SC/ST)	2.0	2.5	93.5	0.0	91.4	90.6	83.6
Percent Reduction+	9.1	34.8	0.2	100.0	0.6	0.3	3.9
Religion							
1992							
Hindu	6.6	3.7	89.6	0.2	84.4	NA	NA
Muslim	1.6	1.6	96.9	—	85.3	NA	NA
Christian	9.5	1.9	88.6	—	79.0	NA	NA
1999							
Hindu	2.2	2.2	95.5	0.1	93.3	90.2	80.7
Muslim	3.7	3.5	92.8	0.0	93.7	91.6	78.8
Christian	1.5	1.9	96.6	0.0	89.5	93.0	80.2
Percent Reduction+	31.8	30.4	1.3	100.0	0.5	3.0	0.2
Standard of living							
1999							
Low	3.2	2.3	94.3	0.2	90.6	88.3	77.1
Medium	1.8	2.6	95.6	0.0	94.9	90.1	81.6
High	0.6	0.8	98.6	0.0	95.8	95.6	89.1
Percent Reduction+	72.7	65.2	3.4	100.0	2.8	5.9	10.7

Note: For births to sample women during the four years preceding the survey in NFHS-1 and for two most recent births during the three years preceding survey to the sample women in NFHS-2.

— Less than 0.05 percent. NA - Not available in the NFHS-1.

+ Percent Reduction in the absence of inequality.

@ Index for the top one-fourth of the socio-economic status category and the percent change if all enjoy the socio-economic status of top one-fourth

Source: Tables 9.3 of NFHS-1 and 8.5 of NFHS-2.

Table 14

Percent distribution of live births by place of delivery in NFHS-1, 1992 and NFHS-2, 1999.

Background Characteristics	Place of delivery					Don't know/ missing
	Health facility/ institution		Home			
	Public	Private home	Own home	Parent's	Other	
ALL 1999	38.2	41.1	13.0	7.0	0.6	0.0
Index for top one fourth@	27.9	68.4	1.1	2.2	0.0	0.0
Percent change@	27.0	66.4	91.5	68.6	100.0	100.0
Residence						
1992						
Urban	44.9	44.9	5.1	4.3	0.7	0.2
Rural	27.3	21.4	35.4	14.2	0.9	0.7
1999						
Urban	44.4	48.1	4.4	3.0	0.1	0.0
Rural	35.0	37.5	17.5	9.1	0.9	0.0
Mother's Education						
1992						
Illiterate	33.1	12.0	37.9	15.0	0.9	1.0
Literate, < middle school complete	37.3	34.4	17.9	9.1	1.0	0.2
Middle school complete	37.2	45.6	10.2	6.0	0.9	—
High school complete and above	26.1	63.3	6.4	3.8	0.4	—
1999						
Illiterate	40.2	23.2	24.6	11.0	1.2	0.0
Literate, < middle school complete	40.2	43.2	10.4	5.7	0.5	0.0

Middle school complete	47.9	41.7	4.4	5.9	0.0	0.0
High school complete and above	22.9	72.9	1.8	1.9	0.5	0.0
Caste/tribe						
1992						
Scheduled caste/tribe	29.3	14.9	41.7	12.4	1.1	0.6
Other (non-SC/ST)	34.8	33.8	19.9	10.3	0.7	0.5
1999						
Scheduled caste/tribe	42.9	25.8	18.5	11.7	1.1	0.0
Other (non-SC/ST)	37.9	46.2	10.9	5.5	0.5	0.0
Religion						
1992						
Hindu	33.9	27.4	26.3	11.0	0.8	0.6
Muslim	31.8	51.2	10.1	7.0	—	—
Christian	33.3	37.1	18.1	9.5	1.9	—
1999						
Hindu	39.4	38.4	14.1	7.3	0.7	0.0
Muslim	29.4	54.3	9.2	7.0	0.0	0.0
Christian	30.2	66.7	0.0	3.2	0.0	0.0
Standard of living						
1999						
Low	45.1	23.7	20.3	10.3	0.7	0.0
Medium	38.8	44.7	9.9	5.7	0.8	0.0
High	15.8	80.8	1.3	2.1	0.0	0.0

Note: For births to sample women during the four years preceding the survey in NFHS-1 and for births during the three years preceding survey to the sample women in NFHS-2. — Less than 0.05 percent. + Percent Reduction in the absence of inequality. @ Index for the top one-fourth of the socio-economic status category and the percent change if all enjoy the socio-economic status of top one-fourth.

Source: Tables 9.4 of NFHS-1 and 8.6 of NFHS-2.

Table 15

Percent distribution of live births during the four years preceding NFHS-1, 1992 and three years preceding NFHS-2, 1999 by type of assistance during delivery.

Background Characteristics	Attendant assisting during delivery			
	Doctor	ANM/Nurse/ midwife/LHV	Traditional birth attendant	Others*
All				
1992	42.8	28.4	21.4	7.5
1999	60.1	23.6	9.9	6.3
Index for top one fourth@	86.0	14.0	0.0	0.0
Percent change@	43.1	40.7	100.0	100.0
Residence				
1992				
Urban	66.2	25.6	6.3	2.1
Rural	29.8	29.9	29.9	10.4
1999				
Urban	75.0	19.9	3.3	1.8
Rural	52.4	25.6	13.4	8.7
Percent Reduction+	24.8	15.7	66.7	71.4
Mother's education				
1992				
Illiterate	25.2	29.3	33.5	12.0
Literate,<middle school complete	46.9	31.8	16.0	5.2
Middle school complete	59.1	31.2	6.0	3.7
High school complete and above	76.1	17.8	6.1	—
1999				
Illiterate	42.8	27.1	16.3	13.7
Literate,<middle school complete	61.5	27.7	8.2	2.6
Middle school complete	67.4	24.7	6.9	1.0
High school complete and above	85.5	10.8	2.4	1.4
Percent Reduction+	42.3	54.2	75.8	84.1

Caste/tribe				
1992				
Scheduled caste/tribe	25.6	29.0	31.0	14.4
Others (non-SC/ST)	47.4	28.3	18.8	5.5
1999				
Scheduled caste/tribe	45.9	28.8	16.1	9.2
Others (non-SC/ST)	65.0	22.1	7.9	4.9
Percent Reduction+	8.2	6.4	20.2	22.2
Religion				
1992				
Hindu	40.2	29.3	22.6	7.9
Muslim	62.0	24.0	9.3	4.7
Christian	55.2	21.9	18.1	4.8
1999				
Hindu	58.2	24.0	11.0	6.8
Muslim	65.5	27.5	2.3	4.7
Christian	85.7	11.1	3.2	0.0
Percent Reduction+	42.6	53.0	76.8	100.0
1999***Standard of Living***				
Low	44.5	29.6	16.2	9.7
Medium	64.5	23.3	7.2	4.9
High	91.6	7.2	1.3	0.0
Percent Reduction+	52.4	69.5	86.9	100.0

Note: In case of more than one attendant, only the most qualified attendant is considered.

** Others include relatives or others or none.*

— Less than 0.05 percent

+ Percent Reduction in the absence of inequality

@ Index for the top one-fourth of the socio-economic status category and the percent change if all enjoy the socio-economic status of top one-fourth

Source: Table 9.5 form NFHS-1 and Table 8.7 from NFHS-2.

Table 16

Percent of children in the age group 12-23 months who received each vaccine by the time of survey in NFHS-1, 1992 and NFHS-2, 1999.

Background Characteristic	Percentage vaccinated										
	BCG	Polio	DPT			Polio			Mea-	All	None
		0	1	2	3	1	2	3	sles		
ALL 1992	91.7	19.4	95.0	92.2	86.5	94.1	91.0	85.3	71.6	64.9	3.3
ALL 1999	98.6	85.5	98.6	97.5	96.7	99.7	99.5	98.0	90.2	88.8	0.3
Index for top one fourth@	100.0	95.1	100.0	98.1	98.1	100.0	100.0	99.0	95.1	NA	NA
Percent change@	1.4	11.2	1.4	0.6	1.4	0.0	0.5	1.0	5.4	NA	NA
Residence 1992											
Urban	94.7	23.3	96.7	95.3	92.0	96.7	95.3	92.0	75.3	73.3	2.0
Rural	90.1	17.3	94.1	90.4	83.5	92.6	88.6	81.6	69.5	60.3	4.0
1999											
Urban	100.0	94.3	100.0	100.0	99.8	100.0	100.0	99.8	96.8	96.8	0.0
Rural	97.9	80.8	97.9	96.2	95.0	99.6	99.2	97.1	86.7	84.6	0.4
Percent change+	1.4	10.3	1.4	2.6	3.2	0.3	0.5	1.8	7.3	9.0	—
Mother's education **1992**											
Illiterate	88.3	10.7	92.9	88.8	78.2	91.4	86.3	77.2	66.0	55.8	5.1
Literate,<middle school complete	90.6	27.4	94.3	93.4	91.5	94.3	94.3	90.6	68.9	64.2	3.8
Middle school complete	96.1	27.5	98.0	98.0	96.1	98.0	98.0	94.1	76.5	70.6	—
High school comp. and above	100.0	26.5	100.0	95.6	95.6	98.5	94.1	94.1	88.2	88.2	—
1999											
Illiterate	97.4	77.0	96.7	95.5	94.2	99.4	98.7	95.5	87.1	85.1	0.6
Literate,<middle school complete	100.0	91.7	100.0	100.0	98.3	100.0	100.0	99.7	91.8	91.8	0.0
Middle school complete	98.5	88.9	100.0	98.5	98.5	100.0	100.0	100.0	88.1	85.1	0.0
High school comp. and above	100.0	94.1	100.0	98.6	98.6	100.0	100.0	100.0	97.2	97.2	0.0
Percent change+	1.4	10.1	1.4	2.6	2.0	0.3	0.5	2.0	7.8	9.5	—

Caste/tribe											
1992											
Scheduled caste/tribe	90.3	15.1	91.4	84.9	79.6	92.5	87.1	80.6	66.7	59.1	6.5
Others (non-C/ST)	92.1	20.7	96.0	94.2	88.4	94.5	92.1	86.6	72.9	66.6	2.4
1999											
Scheduled caste/tribe	99.0	77.9	99.0	99.0	97.0	100.0	100.0	99.0	85.2	84.2	0.0
Others (non-C/ST)	98.8	88.8	98.8	97.3	96.8	99.6	99.2	98.0	92.2	90.6	0.4
Percent change+	0.2	3.9	0.4	1.5	0.1	0.3	0.5	1.0	2.2	2.0	—
Religion											
1992											
Hindu	92.0	18.7	95.0	92.8	87.1	93.9	91.5	85.7	71.6	65.0	3.6
Muslim*	90.0	16.7	96.7	93.3	86.7	96.7	90.0	86.7	76.7	70.0	3.3
Christian*	88.9	33.3	92.6	81.5	77.8	92.6	85.2	77.8	66.7	59.3	—
1999											
Hindu	98.4	84.5	98.4	97.5	96.5	99.7	99.4	98.1	89.7	88.1	0.3
Muslim*	100.0	90.8	100.0	95.9	95.9	100.0	100.0	95.9	95.9	95.9	0.0
Christian*	100.0	94.2	100.0	100.0	100.0	100.0	100.0	100.0	90.6	90.6	0.0
Percent change+	1.4	10.4	1.4	2.6	3.4	0.3	0.5	2.0	6.3	8.0	—
1999											
Low	96.6	79.4	97.9	97.9	95.7	99.3	99.3	97.8	87.5	86.1	0.7
Medium	100.0	87.6	99.4	97.0	97.0	100.0	99.4	98.2	90.5	88.7	0.0
High	100.0	97.0	100.0	100.0	100.0	100.0	100.0	100.0	98.1	98.1	0.0
Percent change+	1.4	13.5	1.4	2.6	3.4	0.3	0.5	2.0	8.6	10.5	—
Sex of child											
1992											
Male	92.5	18.6	95.0	93.5	86.9	93.0	91.0	85.4	74.4	68.3	3.5
Female	91.0	20.2	95.1	91.0	86.1	95.1	91.0	85.2	69.1	61.9	3.1
1999											
Male	99.0	86.5	99.0	97.4	96.2	100.0	99.5	98.3	91.6	89.5	0.0
Female	98.3	84.4	98.3	97.7	97.1	99.4	99.4	97.7	88.6	88.0	0.6
Percent change+	***0.4***	***1.1***	***30.4***	***0.2***	***0.4***	***0.3***	***0.0***	***0.3***	***1.6***	***0.8***	—

* *Based on 25-49 cases.*

\+ *Percent change in the absence of inequality.*

@ *Index for the top one-fourth of the socio-economic status category and the percent change if all enjoy the socio-economic status of top one-fourth.*

Source: Based on Table 9.9 from NFHS-1 and Table 6.7 of NFHS-2.

Table 17

Percent distribution of surviving children under age 3 who received any vaccinations by source of most of the vaccinations in NFHS-2, 1999.

Background Characteristic	Source			
	Public medical sector	NGO or trust hospital/clinic	Private medical sector	Others
All	77.6	0.6	20.6	1.2
Index for top one fourth@	56.5	0.6	42.6	0.3
Percent change@	27.2	0.0	106.8	75.0
Residence				
Urban	69.5	1.3	28.5	0.7
Rural	81.8	0.3	16.4	1.4
Percent change+	5.4		38.3	41.7
Education				
Illiterate	89.6	0.5	8.2	1.7
Literate, < middle school complete	79.8	0.4	18.6	1.2
Middle school complete	76.7	0.9	21.9	0.4
High school complete and above	53.2	0.9	44.9	0.9
Percent Reduction+	15.5		118.0	66.7
Caste/tribe				
Scheduled caste	87.9	1.4	7.9	2.8
Other backward class	74.7	0.4	24.2	0.7
Percent change+	13.3		17.5	41.7
Religion				
Hindu	78.7	0.5	19.7	1.0
Muslim	75.9	0.0	22.5	1.6
Christian	60.6	3.2	32.8	3.3
Percent change+	1.4		59.2	16.7
Standard of living				
Low	89.2	1.2	7.3	2.3
Medium	79.5	0.4	19.6	0.6
High	38.0	0.0	61.8	0.2
Percent change+	15.0		200.0	83.3
Sex of child				
Male	77.2	0.7	21.1	1.0
Female	77.9	0.6	20.1	1.4
Percent change+	90.4		2.4	16.7

+ Percent change in the absence of inequality

@ Index for the top one-fourth of the socio-economic status category and the percent change if all enjoy the socio-economic status of top one-fourth

Source: Table 6.9 of NFHS-2 report.

Table 18

Percent of children of age 12-35 months who ever received at least one dose of vitamin A and who received at least one dose within the six months preceding the survey in NFHS-2, 1999.

Background Characteristic	Percentage who received Vitamin A	
	At least one dose	Atleast one dose within past six months
All	16.2	10.0
Index for top one fourth@	22.5	11.0
Percent change@	38.9	10.0
Residence		
Urban	19.3	12.9
Rural	14.5	8.3
Percent change+	19.1	29.0
Education		
Illiterate	10.8	5.6
Literate, < middle school complete	20.2	11.9
Middle school complete	17.1	11.3
High school complete and above	21.7	15.6
Percent Reduction+	34.0	56.0
Caste/tribe		
Scheduled caste	11.6	7.4
Other backward class	17.8	10.7
Percent change+	9.9	7.0
Religion		
Hindu	15.1	9.4
Muslim	21.3	10.3
Christian	24.7	16.2
Percent change+	52.5	62.0
Standard of living		
Low	13.1	6.3
Medium	17.0	10.7
High	22.8	17.6
Percent change+	40.7	76.0
Sex of child		
Male	16.3	8.8
Female	16.1	11.2
Percent change+	0.6	12.0

+ Percent change in the absence of inequality

@ Index for the top one-fourth of the socio-economic status category and the percent change if all enjoy the socio-economic status of top one-fourth

Source: Table 6.10 of NFHS-2 report.

Table 19

Percentage taken to a health facility or provider among children (under four years in NFHS-1, 1992 and under three years in NFHS-2, 1999) who had cough accompanied by fast breathing (symptoms of acute respiratory infection – ARI).

Background Characteristic	Percentage with ARI taken to a health facility or provider	
	1992	1999
All	67.4	82.9
Index for top one fourth@	—	89.3
Percent change@	—	7.7
Residence		
Urban	(66.7)	82.6
Rural	67.7	83.0
Percent change+	—	NA
Education		
Illiterate	63.6	77.5
Literate	72.4	88.3
Percent change+	—	6.5
Caste/tribe		
Scheduled caste	(71.4)	(75.5)
Others	65.7	85.7
Percent change+	—	3.4
Standard of living		
Low	NA	83.7
Medium	NA	81.1
High	NA	*
Percent change+	—	NA
Sex of child		
Male	67.2	82.7
Female	67.6	83.1
Percent change+	—	0.2

( ) Based on 25-49 cases

• Percentage not shown as the cases are less than 25.

NA Not available

+ Percent change in the absence of inequality

@ Index for the top one-fourth of the socio-economic status category and the percent change if all enjoy the socio-economic status of top one-fourth

Source: Table 9.12 of NFHS-1 and Table 6.11 of NFHS-2 report.

Table 20

Percentage of children taken to a health facility or provider among children under four years of age suffered from fever during the two weeks before the survey, NFHS-1, 1992.

Background Characteristic	Percentage taken to a health facility or provider
All	73.1
Residence	
Urban	77.5
Rural	70.2
Percent change+	6.0
Education	
Illiterate	69.5
Literate	76.4
Percent change+	4.5
Caste/tribe	
Scheduled caste	67.8
Others	74.4
Percent change+	1.8
Sex of child	
Male	74.8
Female	71.5
Percent change+	2.3

+ Percent change in the absence of inequality

Source: Table 9.13 of NFHS-1.

Table 21

Among children (under four years in NFHS-1, 1992 and under three years in NFHS-2, 1999) who had diarrhoea in the past two weeks, percent taken to a health facility or provider for treatment, percent received oral rehydration therapy (oral rehydration solution (ORS) made from a packet and percent who were not given any treatment.

Background Characteristics	NFHS-1, 1992			NFHS-2, 1999		
	Percent taken to a health facility or provider	ORS packets used	None	Percent taken to a health facility or provider	ORS packets used	None
All	54.8	18.6	23.1	67.3	27.9	21.6
Index for top one fourth@	—	—	—	82.5	22.5	5.0
Percent change@	—	—	—	22.6	19.4	76.9
Residence						
Urban	58.6	10.0	18.6	72.3	29.0	15.0
Rural	52.7	23.3	25.6	64.5	27.3	25.3
Percent change+	—	—	—	7.4	3.9	30.6
Mother's Education						
Illiterate	47.4	17.9	31.6	65.1	33.7	32.1
Literate, < middle school complete	(57.8)	(24.4)	(20.0)	(57.8)	(23.9)	(20.0)
Middle school complete	(56.3)	(15.6)	(18.8)	(69.6)	(25.1)	(11.4)
High school complete and above	(74.1)	(14.8)	(3.7)	(84.4)	(22.7)	(8.4)
Percent change+	—	—	—	25.4	20.8	61.1
Caste/tribe						
Scheduled caste	(43.7)	(15.2)	(39.1)	(70.8)	(25.5)	(25.6)
Other (non-SC/ST)	58.2	19.6	18.3	66.9	28.9	19.6
Percent change+	—	—	—	5.2	3.6	9.3
Standard of living						
Low	NA	NA	NA	65.2	23.4	25.8
Medium	NA	NA	NA	64.4	32.6	19.1
Percent change+	—	—	—	—	16.8	11.6
Sex of child						
Male	60.0	21.1	18.9	69.6	32.8	16.9
Female	50.5	16.5	26.6	64.8	22.4	26.9
Percent change+	—	—	—	3.4	17.6	21.8

( ) Based on 25-49 cases.; NA Not available.

+ Percent change in the absence of inequality

@ Index for the top one-fourth of the socio-economic status category and the percent change if all enjoy the socio-economic status of top one-fourth

Source: Table 9.15 of NFHS-1 and Table 6.13 of NFHS-2 report.

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